

Buddy Garcia, *Chairman*  
Larry R. Soward, *Commissioner*  
Bryan W. Shaw, Ph.D., *Commissioner*  
Glenn Shankle, *Executive Director*



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## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

January 15, 2008

Mr. Dan J. Swaim  
Babcock & Wilcox Technical Services Pantex, L.L.C.  
P.O. Box 30020  
Amarillo, Texas 79120

Re: United States Department of Energy (CN600125009) and Babcock & Wilcox Technical Services Pantex, L.L.C. (601599103)  
Endorsement of Permit No. WQ0004397000 (RN100210756)

Dear Mr. Swaim:

Enclosed is a copy of an order endorsing the above referenced permit which was previously issued to United States Department of Energy and BWXT Pantex, LLC. This document is part of the affected permit and should be incorporated therein. Please attach the order to your copy of the permit for your records.

Should you need additional information, please contact Katherine McKenzie of the Texas Commission on Environmental Quality Registration, Review, and Reporting Division, Permits Administrative Review Section (MC148) at (512) 239-5704.

Sincerely,

*Laurie J. Lancaster*

Laurie J. Lancaster, Team Leader  
Applications Review and Processing Team (MC-148)  
Water Quality Division

LJL/kcm

Enclosure

cc: TCEQ Region 1, Water Program Manager

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



### ENDORSEMENT TO

~~TEXAS COMMISSION ON ENVIRONMENTAL QUALITY~~

PERMIT NO. WQ0004397000

FROM United States Department of Energy and BWXT Pantex, LLC

TO United States Department of Energy and Babcock & Wilcox Technical Services Pantex,  
L.L.C.

The name of the above-referenced permit, Texas Water Quality Permit issued February 9, 2005, has changed. That part of the signature page pertaining to the name and mailing address of the permit holder is hereby changed so that the same shall hereinafter be and read as follows:

"United States Department of Energy and  
Babcock & Wilcox Technical Services Pantex, L.L.C.  
P.O. Box 30030  
Amarillo, Texas 79120"

The change of name is in accordance with 30 Texas Administrative Code Subsection 50.45(b)(3).

This order is part of the permit and should be attached thereto.

ISSUED DATE: January 3, 2008

A handwritten signature in dark ink, appearing to be "D. Smith", written over a horizontal line.

For The Commission

Kathleen Hartnett White, *Chairman*  
R. B. "Ralph" Marquez, *Commissioner*  
Larry R. Soward, *Commissioner*  
Glenn Shankle, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

February 16, 2005

Mr. Craig Snider  
United States Department of Energy  
And BWTX Pantex, L.L.C.  
Pantex Site Office  
P. O. Box 30030  
Amarillo, Texas 79120-0030

Re: United States Department of Energy and BWTX Pantex, L.L.C., Permit No. WQ0004397000  
(RN 100210756; CN 600125009)

Dear Mr. Snider:

Enclosed is a copy of the above referenced permit for a wastewater treatment facility issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

Self-reporting or Discharge Monitoring Forms and instructions will be forwarded to you from the Water Quality Management Information Systems Team so that you may comply with monitoring requirements. For existing facilities, revised forms will be forwarded if monitoring requirements have changed.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit.

Should you have any questions, please contact Mr. Michael Sunderlin of the Texas Commission on Environmental Quality's Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address below.

Sincerely,

A handwritten signature in dark ink, appearing to read "L'Oreal W. Stepney".

L'Oreal W. Stepney, Director  
Water Quality Division

LWS/MS/lh

Enclosures

cc: TCEQ, Region 1





PERMIT NO. WQ0004397000

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
P. O. Box 13087  
Austin, Texas 78711-3087

This permit supersedes and replaces  
TCEQ Permit No. WQ0004397000,  
issued on October 6, 2003.

**PERMIT TO DISCHARGE WASTES**  
under provisions of Chapter 26  
of the Texas Water Code

**I. Name of Permittee:**

- A. Name: United States Department of Energy and BWTX Pantex, L.L.C.  
B. Address: Pantex Site Office  
P.O. Box 30030  
Amarillo, Texas 79120

**II. Nature of Business Producing Waste:**

Facility principally engaged in the assembly of nuclear weapons from components received from other Department of Energy plants; the fabrication of chemical high explosive components for nuclear weapons; surveillance testing and processing of chemical high explosives; disassembly of nuclear weapons; maintenance, modification, repair and nonexplosive testing of nuclear weapons components; and disposal of treated environmental restoration wastewater. (SIC 2892 & 3483)

**III. General Description and Location of Waste Disposal System:**

**Description:**

Mixture of domestic sewage and photographic processing washwater; wastewaters from energetics production; reverse osmosis system and ion-exchange columns brine, and boiler wastewater and energetic machining wastewater are discharged to the wastewater treatment system. All wastewaters (except for pretreated wastewaters from on-site environmental restoration activities) are routed to a facultative lagoon (33.3 acre-feet capacity) prior to disposal via the subsurface irrigation of three 100 acre tracts of land. System also includes another 33.3 acre-feet lagoon that can be used for either treatment or storage, and a 21.1 acre-feet lagoon that is used for storage. Pretreated wastewaters from on-site environmental restoration activities are routed to one of the storage lagoons before disposal via the subsurface irrigation on three 100-acre tracts of land.

**Location:**

Located approximately 17 miles northeast of the City of Amarillo and 10 miles west of the City of Panhandle, west of State Highway 2373, south of State Highway 293 and north of U.S. Highway 60, Carson County, Texas.

**Drainage Basin:**

Adjacent to the watershed of McClellan Creek which flows into the North Fork Red River, in Segment No. 0224, of the Red River Basin. No discharge of pollutants into water in the state is authorized by this permit.

This permit and the authorization contained herein shall expire at midnight on December 1, 2010.

ISSUED DATE: **FEB 09 2005**

For the Commission

## IV. CONDITIONS OF THE PERMIT:

Character: Treated domestic effluent and industrial effluent. The term "industrial effluent" includes process wastewater (from photographic processing units and production of energetics), utility wastewaters, non-contact cooling (heating) waters, and pretreated wastewaters from environmental restoration activities.

Volume: The amount of wastewater released from the facultative treatment lagoon shall not exceed a daily average flow of 560,000 gallons per day.

Quality: Effluent land applied shall meet the following effluent limitations and/or shall be monitored at a frequency of 1/month, by grab sample from an established sampling point located after discharge from the facultative lagoon and prior to irrigation, in accordance with the following schedule. Sampling shall be done prior to the addition of herbicides, pesticides, fertilizers, and/or other agricultural/maintenance supplements.

<u>Parameter</u>	<u>Maximum Limit</u>
Total Arsenic	0.3 mg/l
Total Cadmium	0.2 mg/l
Total Chromium	5.0 mg/l
Total Copper	2.0 mg/l
Total Lead	1.5 mg/l
Total Manganese	3.0 mg/l
Total Mercury	0.01 mg/l
Total Nickel	3.0 mg/l
Total Selenium	0.2 mg/l
Total Silver	0.2 mg/l
Total Zinc	6.0 mg/l
pH	6.0 S.U. (min) 10.0 S.U. (max)
Biochemical Oxygen Demand (5-day)	Report [mg/l]
Chemical Oxygen Demand	Report [mg/l]
Oil and Grease	Report [mg/l]
Ammonia (as Nitrogen)	Report [mg/l]
Nitrates/Nitrites (as Nitrogen)	Report [mg/l]
Total Cyanide	Report [mg/l]
Total Antimony	Report [mg/l]
Total Beryllium	Report [mg/l]
Total Cobalt	Report [mg/l]
Total Molybdenum	Report [mg/l]
Total Thallium	Report [mg/l]
Total Titanium	Report [mg/l]
Trinitrotoluene (TNT)	Report [mg/l]
RDX (Total)	Report [mg/l]
HMX	Report [mg/l]
PETN	Report [mg/l]

Results from the analyses shall be retained on site for five years and available for inspection by authorized representatives of the TCEQ.



Application Rates:A. Hydraulic application rate:

Grain Sorghum	2.97 acre-feet/acre/growing season
Soybean	3.05 acre-feet/acre/growing season
Corn:	3.77 acre-feet/acre/growing season
Cotton:	3.24 acre-feet/acre/growing season
Winter Wheat	3.23 acre-feet/acre/growing season
Oats	2.81 acre-feet/acre/growing season
Opportunity Wheat	2.68 acre-feet/acre/growing season

Effluent shall not be applied at times that the soil moisture levels exceed field capacity levels.

B. Nitrogen loading rates per crop (measured as total nitrogen):

Grain Sorghum	120 lbs/acre/growing season
Soybean	220 lbs/acre/growing season
Corn:	180 lbs/acre/growing season
Cotton:	40 lbs/acre/growing season
Winter Wheat	60 lbs/acre/growing season
Oats	60 lbs/acre/growing season
Opportunity Wheat	60 lbs/acre/growing season

Nitrogen application rates shall be tabulated on a monthly (calendar month) basis by calculation using volumes of wastewater used for irrigation for each crop (cumulative flows for that month) and the corresponding concentrations of the nitrogen components [summation of ammonia (as nitrogen) and nitrate/nitrites (as nitrogen)] as measured in accordance with sampling requirements above, for the nitrogen loading rate.

On a monthly basis, nitrogen loading rates for each crop and the total acreage of each crop irrigated at each irrigation site shall be recorded and maintained in an operating log. Nitrogen loading data and crop acreage shall be tabulated and totaled for each crop for the duration of the respective growing season. The tabulated data shall be retained on site with data available from the previous five years and available for inspection by authorized representatives of the TCEQ and contained in the operating log required in Special Provision V.E. Growing seasons shall be consistent with accepted agronomic growing time frames for which a sustainable crop is maintained on the irrigation tracts.

V. SPECIAL PROVISIONS:

## A. For the purpose of Part IV of this permit, the following definitions shall apply:

1. A grab sample means an individual sample collected in less than 15 minutes.
2. Grab sample quality means the quality determined by measuring the concentration in milligrams per liter, parts per million or other appropriate units of measurement in a single grab sample of the defined waste.
3. Daily average flow volume means the arithmetic average of all determinations of the daily flow measurement within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If

instantaneous measurements are used to determine the daily discharge, the determination shall be the arithmetic average of all instantaneous measurements taken during that month.

4. The term "land with suitable vegetative cover" means 1) land where seeds are to be planted within 30 days; or 2) seeds have been planted; or 3) an established crop or grass is present.
- B. This permit does not authorize the discharge of any pollutant from the subsurface irrigation site. The wastewater disposal system shall be designed and operated to prevent:
1. Discharge from the irrigated property.
  2. Recharge of groundwater resources which supply or may potentially supply domestic raw water.
  3. The occurrence of nuisance conditions.
- C. A readily accessible sampling point and flow measuring device shall be provided by the permittee.
- D. The permittee shall tabulate the volume and quality of the wastewater used for subsurface irrigation, the acreage which has been irrigated, and the soil sampling results for the preceding year.
- E. The permittee shall maintain an operating log which records the volume of wastewater used for subsurface irrigation each day and the actual area wetted each day. Results from the analyses required in Part IV and the operating log shall be retained on site for five years and available for inspection by authorized representatives of the TCEQ. A separate log shall be maintained for each 100 acre tract.
- F. The permittee shall provide adequate maintenance of the treatment and irrigation facilities to ensure that the facilities are in working condition. No treatment or irrigation facilities shall be removed from service without prior notification of the Executive Director of the TCEQ.
- G. Storm water drainage shall be prevented from entering all ponds and shall not be directed onto the irrigation tract.
- H. Ponds:
1. Any new wastewater storage and/or treatment ponds shall be lined in compliance with one of the following requirements:
    - a. Soil Liner: The soil liner shall contain at least three feet of clay-rich (liquid limit greater than or equal to 30 and plasticity index greater than or equal to 15) soil material along the sides and bottom of the pond compacted in lifts of no more than 9 inches, to 95% standard proctor density at the optimum moisture content to achieve a permeability equal to or less than  $1 \times 10^{-7}$  cm/sec.
    - b. Synthetic/Plastic/Rubber Liner: The liner shall be either a plastic or rubber membrane liner at least 30 mils in thickness which completely covers the sides and the bottom of the pond and which is not subject to degradation due to reaction with wastewater with which it will come into contact. If this lining material is vulnerable to ozone or ultraviolet deterioration it shall be covered with a protective layer of soil of at least six inches. A leak detection system is also required.



- c. Alternate Liner: The permittee shall submit plans for any other pond lining method. Pond liner plans must be approved in writing by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) prior to pond construction.

The permittee shall furnish certification by a Texas licensed professional engineer that the completed pond lining meets the appropriate criteria prior to utilization of the facilities.

2. The permittee shall notify the TCEQ Regional Office upon completion of construction of any pond and at least a week prior to its use.
  3. The permittee shall maintain a minimum two foot freeboard for all wastewater ponds.
  4. At least once per month, the permittee shall inspect any pond leak detection systems that are in service. Leaking ponds shall be removed from service either until repairs are made or replacement ponds are constructed.
- I. The permittee shall conduct annual soil testing of the wastewater application area during the period of January 1 to March 31 of each year. Representative soil samples shall be obtained and analyzed for the following parameters:

pH	Electrical Conductivity
Total Nitrogen	Nitrate Nitrogen
Phosphorus	Potassium
Sodium	Magnesium
Calcium	Sulfur
Sodium Adsorption Ratio (SAR)	Ignitability
Reactivity	Total Arsenic
Total Barium	Total Cadmium
Total Chromium	Total Lead
Total Mercury	Total Selenium
Total Silver	Benzene
Carbon tetrachloride	Chlorobenzene
Chloroform	o-Cresol
m-Cresol	p-Cresol
Cresol	2,4-D
1,4-Dichlorobenzene	1,2-Dichloroethane
1,1-Dichloroethylene	2,4-Dinitrotoluene
Heptachlor (and its epoxide)	Hexachlorobenzene
Hexachlorobutadiene	Hexachloroethane
Lindane	Methoxychlor
Methyl ethyl ketone	Nitrobenzene
Pentachlorophenol	Pyridine
Tetrachloroethylene	Trichloroethylene
2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
Vinyl chloride	

The nutrient parameters should be analyzed on a plant available or extractable basis. All results shall be reported in mg/kg (parts per million). When reporting the results, include all information pertaining to fertilizer recommendations. If the SAR is 10 or greater, amendments (e.g. lime, gypsum, calcium chloride) shall be added to the soil to adjust the SAR to less than 10.



Composite or benchmark sampling techniques should be used when sampling the soils of the wastewater application area. Individual soil types, as defined by the USDA Soil Conservation Service soil survey, should be sampled individually at zones of 0-6, 6-18, and 18-30 inches. Each composite sample shall represent no more than 100 acres with no less than 18 subsamples representing each composite sample. Each benchmark sample shall represent no more than 100 acres with at least 9 subsamples for each benchmark composite sample. Subsamples shall be composited by individual site, zone and soil type for analysis and reporting.

- J. The wastewaters generated and authorized for disposal via this permit are also authorized for discharge via TPDES Permit No. 02296 issued on September 14, 2001; for that reason, no storage requirements are specified in this permit. In the event TPDES Permit No. 02296 is terminated (revocation or expiration), the permittee shall submit a plan and/or permit amendment application to 1) demonstrate that it has sufficient storage capacity to obtain a negative "accumulative water balance" as defined in 30 TAC 309.20; 2) create additional storage capacity by the addition of new or expansion of existing ponds for effluent storage; 3) reduce the amount of wastewater land applied; or 4) implement process changes that will limit the generation of wastewaters when volume of wastewater in storage ponds are at maximum capacity. The plan and/or permit amendment application shall be submitted to the Executive Director within ninety days of termination of TPDES Permit No. 02296.
- K. Irrigation of wastewater under the authorization of this permit may only be conducted on land with suitable vegetative cover. This permit does not authorize nor regulate the disposal of wastewater on fallow ground. It is the obligation of the permittee to obtain authorization to land apply treated wastewater on fallow ground from the appropriate regulatory authority (TCEQ, UIC Permitting).
- L. The irrigation lines shall be located within the root zone. The minimum depth of soil above the irrigation lines shall be at least six inches, and the minimum depth of soil below the irrigation lines shall consist of at least twelve inches of usable soil.
- M. Permit Provisions IV., V.E., VLG., and VI.H., for the purposes of entry into the Pantex Plant are amended for purposes of this permit subject to the provisions of the Atomic Energy Act (as amended).
- N. The permittee shall submit a report each year for the duration of this permit, for the period of September through August, by December 15<sup>th</sup>, containing the following elements:
  - 1. Results of all analyses required under Provision IV. (Quality).
  - 2. Results of monthly nitrogen loading rates for each crop for which record keeping is required by Provision IV. (Application Rates) (Nitrogen Loading Rates).
  - 3. The tabulated volume of the wastewater applied for subsurface irrigation and the associated acreage which has been irrigated.
  - 4. Results of annual soil testing required by Provision V.I. of areas where wastewater has been applied to during the year.
  - 5. A cropping report for the year which includes:
    - a. A soils map depicting which crops were grown at each location.
    - b. The acreage of each location.
    - c. The growing season of each crop.

- d. The nutrient applied at each location.
  - e. The amounts of treated effluent applied to each location and supplemental watering requirements.
  - f.. The salt tolerances of each crop.
  - g. The harvesting methods of each crop.
  - h. Number of harvests per year per crop.
6. Copies of this report shall be submitted to the following TCEQ programs:
- a. Water Quality Compliance Monitoring Team (MC-224) of the Enforcement Division.
  - b. Groundwater Protection Team (MC-150) of the Water Quality Division.
  - c. Industrial Permits Team (MC-148) of the Water Quality Division.
  - d. TCEQ Region 1 Office, Amarillo, Texas.

#### VI. STANDARD PROVISIONS:

- A. This permit is granted in accordance with the Texas Water Code and the rules and other Orders of the Commission and the laws of the State of Texas.
- B. 1. 30 TAC § 305.125(9) Unless specified otherwise, the permittee shall report any noncompliance which may endanger human health, safety or the environment to the Executive Director. Report of such information shall be provided orally [to the Regional Office] within 24 hours from the time the permittee becomes aware of the noncompliance and in writing [to the Regional Office and to the Manager of the Enforcement Section III (MC-149) of the Enforcement Division] within five working days of the time the permittee becomes aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
2. Notwithstanding any of the above, any noncompliance of daily average values which deviates more than 40% from the permitted limitation identified in Provision IV. (Quality) shall be reported orally and in writing to the Regional Office within 5 working days of becoming aware of the condition (i.e. following sample validation and verification). Pursuant to this section, any exceedence of minimum, maximum and/or grab requirements shall be reported in writing to the Regional Office within 5 working days of sample validation and verification, or as appropriate, within 5 working days of the time the permittee becomes aware of the noncompliance.
- C. 30 TAC § 305.124 Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- D. 1. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified, in writing, of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Water Quality Applications Team (MC-161), Registration, Review & Reporting Division.



2. 30 TAC § 305.125(13) A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC 305.97 (relating to Action on Application for Transfer).
- E.
1. 30 TAC § 305.125(19) When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.
  2. This permit is granted on the basis of the information supplied and representations made by the permittee during the application process, relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part in accordance with 30 TAC §§ 305.61 - 305.69, during its term for cause including but not limited to, the following:
    - a. Violation of any terms or conditions of this permit;
    - b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
    - c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- F. The permittee shall remit an annual waste treatment inspection fee to the Commission as required by 30 TAC Chapter 305 (Subchapter M). Failure to pay this fee may result in revocation of this permit.
- G. The permittee is subject to the provisions of 30 TAC § 305.125 relating to Standard Permit Conditions.
- H. Facilities which generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:
1. Any solid waste generated by the permittee, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a wastewater treatment or water treatment or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid) must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.
  2. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
  3. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.6(g), to the Corrective Action Section of the Commission's Remediation Division informing the Commission of any closure activity involving an Industrial Waste Management Unit, at least 90 days prior to conducting such an activity.

4. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration & Reporting Section (MC-129) of the Commission's Registration, Review & Reporting Division. No person shall dispose of industrial solid waste (including sludge or other solids from wastewater treatment processes) in a landfill prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.
5. The term "industrial solid waste management unit" means a landfill, surface impoundment, tank, wastepile, container storage area, land treatment area, underground injection well, or other area where the processing storage, or disposal of solid waste occurs at a industrial wastewater treatment facility.
6. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:
  - a. Volume of waste and date(s) generated from treatment process;
  - b. Volume of waste disposed of on-site or shipped off-site;
  - c. Date(s) of disposal;
  - d. Identity of hauler or transporter;
  - e. Location of disposal site; and
  - f. Method of final disposal.

The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

- I. For facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with Chapter 361 of the Health and Safety Code of Texas.